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MYCOLOGIA

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ILLUSTRATIONS OF FUNGI—VIII

WILLIAM A. MURRILL

Some time in May, in this latitude, depending upon the temperature and rainfall, tiny mushrooms begin to appear on the lawns and in the fields, and many of them reappear periodically during summer and early autumn after each season of wet weather. These species, as a class, are avoided by the beginner in mycology and are puzzling even to experts. The accompanying plate illustrates a number of them, in selected genera, drawn by Mr. Volkert a year ago from the first specimens found, and reproduced natural size. Later in the season, the sporophores of some of these species tend to grow larger, owing to the increased temperature and the more active mycelium.

Inocybe infida (Peck) Earle

UNSAFE INOCYBE

Plate 40. Figure 1. $\times 1$

Pileus ovoid to campanulate, at length expanded, umbonate, gregarious, 1.5–3 cm. broad; surface silky-scaly, shining, light tawny-brown, sometimes paler, dark reddish-brown on the umbo, often splitting at the margin; lamellae free, crowded, pale-yellowish to grayish-cinnamon; spores ovoid, irregular, nodulose, $10-11 \times 6-7 \mu$; stipe subequal, concolorous, pruinose, scurfy above, 3–5 cm. long, 2–4 mm. thick; veil white, evanescent, clinging in delicate threads to the stipe and the margin of the young pileus.

[MYCOLOGIA for March, 1911 (3: 45–95), was issued March 18, 1911]



ILLUSTRATIONS OF FUNGI

This species was first described as a *Hebeloma* by Dr. Peck, in 1874, from specimens collected on mossy ground in swampy woods in the Adirondacks. Professor Masee, in 1904, includes it in his monograph of the genus *Inocybe*, citing three European synonyms. The form so abundant on the shaded portions of the lawn in front of the museum building of the New York Botanical Garden is darker in color than any specimens previously described. The poisonous properties of this species have been discussed in MYCOLOGIA for September, 1909, and November, 1910.

Naucoria semiorbicularis (Bull.) Quél.

COMMON NAUCORIA

Plate 40. Figure 2. $\times 1$

Pileus hemispheric to convex or rarely plane, gregarious, 2–5 cm. broad; surface glabrous, smooth, often cracking with age, slightly viscid when wet, tawny or ferruginous to paler; lamellae adnate or adnexed, broad, crowded, ferruginous; spores ellipsoid, smooth, brownish-ferruginous, $10\text{--}12 \times 5\text{--}7 \mu$; stipe slightly enlarged at the base, rather tough, stuffed, glabrous, yellowish-brown or reddish-brown, 7–12 cm. long, 2–3 mm. thick.

This excellent edible species is common on lawns and in pastures and along roads and paths from May to November, usually appearing after periods of wet weather. The beginner will have difficulty in distinguishing it because of its homogeneous brownish colors and its lack of definite structural characters.

Omphalia Volkertii sp. nov.

VOLKERT'S OMPHALIA

PLATE 40. FIGURE 3. $\times 1$

Pileus infundibuliform to umbilicate, tough, flexible, scattered, 1–2 cm. broad, about 7 mm. high; surface glabrous, hygrophanous, fuliginous, becoming avellaneous soon after picking; lamellae decurrent, distant, tough, discolored-avellaneous; spores subglobose, smooth, hyaline, 4μ ; stipe crooked, tapering below, concolorous, glabrous, hollow, 1.5–2 cm. long, 1–2 mm. thick.

This species was found abundant and widely scattered over a low, mossy field east of the New York Botanical Garden, on May 22, 1910, by W. A. Murrill and E. C. Volkert. It is most closely

related to *Omphalia montana* Peck, a depauperate form of *O. Gerardiana* Peck collected on Mt. Marcy.

***Laccaria laccata* (Scop.) Berk. & Br.**

WAXY MUSHROOM

Plate 40. Figure 4. $\times 1$

Pileus convex or plane, sometimes depressed at the center, usually gregarious, 1.5–5 cm. broad; surface glabrous or nearly so, hygrophanous, pale-red to flesh-red or darker, fading to grayish on drying, striate in certain thin varieties; lamellae broad, distant, adnate, subdecurrent, or slightly emarginate, pale flesh-red, occasionally deep-violet, dusted at maturity with the abundant spores, which are globose, roughly echinulate, 8–10 μ ; stipe slender, equal, fibrous, glabrous, concolorous with the pileus, 2.5–7 cm. long, 3–6 mm. thick.

As the description indicates, this species is very variable in form, size, and color; but, after all, it is so different from most other mushrooms that it is easily recognized. It is widely distributed throughout temperate regions and is one of the most common species met with, both in woods and fields. All authors pronounce it harmless, and, although poor in quality, it is often eaten. The accompanying figure is drawn from small specimens collected in a low, shady place on a lawn. A larger species, *Laccaria ochropurpurea*, found in woods, is also edible. It differs from *L. laccata* chiefly in size and is by some considered only a variety of that species.

***Psilocybe Foeniseii* (Pers.) Quél.**

HARVEST MUSHROOM

Plate 40. Figure 5. $\times 1$

Pileus conic or campanulate to convex, gregarious, 1–2.5 cm. broad; surface glabrous, hygrophanous, smoky-brown or reddish-brown, paler when dry, often variegated; lamellae adnate, ventricose, not crowded, brown; spores subellipsoid, smooth, brown, 12–15 \times 6–7 μ ; stipe slender, equal, hollow, fragile, glabrous or slightly pruinose, pallid to brownish, 5–8 cm. long, 2 mm. thick.

The harvest mushroom is small but very abundant and may therefore be considered for use as food, although it cannot be

classed among the best species. It occurs everywhere on lawns and in fields after rains throughout the season, and should be carefully distinguished from certain poisonous species of *Panaeolus* and other genera which grow in similar localities.

Conocybe tener (Schaeff.) Fayod

Galera tener (Schaeff.) Quél.

SLENDER CONOCYBE. BROWNIE CAP

Plate 40. Figure 6. $\times 1$

Pileus thin, conic to campanulate, 1–2 cm. broad and high; surface glabrous to slightly pubescent, tan or brownish, slightly darker at the center, hygrophanous, ochraceous when dry; lamellae adnexed, ascending, crowded, fulvous; spores ellipsoid, smooth, dark-ferruginous, $12\text{--}14 \times 6\text{--}8\mu$; stipe slender, equal, subconcolorous, glabrous to slightly pubescent, hollow, fragile, 7–12 cm. long, 2–3 mm. thick.

This shapely little fungus occurs everywhere on lawns and in manured pastures from spring to autumn. When once known, it is not easily confused with any other species. Although edible and well-flavored, it would take a long time to gather enough for a meal.

Panaeolus retirugis (Fries) Quél.

WRINKLED PANAEOLOUS

Plate 40. Figure 7. $\times 1$

Pileus ovoid to conic or campanulate, subumbonate, gregarious, 1–3 cm. broad; surface tan, gray, or brownish, glabrous, reticulate-rugose, especially near the center, viscid and dull-colored in wet weather, cracking in dry weather; margin appressed in young sporophores, decorated with triangular fragments of the veil at maturity; lamellae adnexed, ascending, broad, gray to black; spores ellipsoid, smooth, black, $13\text{--}16 \times 9\text{--}11\mu$; stipe slender, equal, hollow, pruinose, usually gray or reddish-brown, darker below, often banded with the dark spores above, 5–15 cm. long, 3–5 mm. thick; veil white, conspicuous in young stages, not forming an annulus on the stipe, but becoming appendiculate on the margin, especially in wet weather.

This attractive species is common and widely distributed in temperate regions during spring and summer on heavily manured

lawns and about dung in pastures. It is rather easily recognized by its netted and wrinkled cap and the bits of veil that hang from the margin. Although pronounced edible by all authorities, being of nutty flavor and agreeable odor, it does not appeal to mycophagists as most edible species do. Dr. W. W. Ford recently investigated this species and found an extract from it to be fatal to guinea pigs; but an extract from the famous morel, *Morchella esculenta*, was found to have a similar effect.

***Collybidium dryophilum* (Bull.) Murrill**

Collybia dryophila (Bull.) Quél.

OAK COLLYBIDIUM

Plate 40. Figure 8. $\times 1$

Pileus rather tough, convex to nearly plane, sometimes depressed, gregarious to subcespitose, 1-5 cm. broad; surface smooth, glabrous, dry, stramineous to fulvous or bay, margin involute when young; context thin, white, of nutty taste; lamellae adnexed or sinuate, watery-white, rarely yellowish, rather close; spores ellipsoid or ovoid, smooth, hyaline, $5-7 \times 4-5 \mu$; stipe cartilaginous, glabrous, brown and stuffed below, pale and fistulose above, 2.5-7 cm. long, 2-6 mm. thick.

Common throughout temperate regions both in woods and pastures from spring to autumn, occurring on the ground or rarely on decayed wood. An edible species of good quality, known and used in many parts of the world. I have seen it exposed for sale in Jalapa, Mexico, in December, specimens having been brought in from the woods by the Indians. The early spring form here illustrated is about half the size of the usual summer and autumn form.

***Inocybe Lorillardiana* sp. nov.**

LORILLARD INOCYBE

PLATE 40. FIGURE 9. $\times 1$

Pileus subconic to convex or applanate, slightly umbonate, gregarious, 1.5-2.5 cm. broad; surface dry, yellowish-brown, conspicuously imbricate-scaly, the scales more erect on the umbo; context fleshy, thin, pale-yellow, pleasant to the taste; lamellae adnate or adnexed, numerous, unusually broad at the apex, edges

white or pale-yellow; spores oblong-ellipsoid, sometimes slightly curved, smooth, ferruginous, $8-10 \times 4-5.5 \mu$; stipe crooked, enlarged above, cream-colored, with conspicuous tufts of ferruginous fibrils, giving it a shaggy appearance, about 3 cm. long, 2-3 mm. thick; veil slight, pale-yellowish, disappearing at a very early stage.

The plants figured, the type specimens, were found growing among mosses on the lawn adjoining the Lorillard Mansion in Bronx Park, July 3, 1910, by W. A. Merrill.

***Naucoria pennsylvanica* (Berk. & Curt.) Sacc.**

PENNSYLVANIA NAUCORIA

PLATE 40. FIGURE 10. $\times 1$

Pileus globose to hemispheric, subcespitose, 1-2 cm. broad; surface dry, hispid-squamulose, pale-fulvous, margin incurved, slightly appendiculate in early stages; lamellae squarely adnate, broad, ferruginous-fulvous; spores ellipsoid, often plane or concave on one side, smooth, deep-ferruginous, $7 \times 4-5 \mu$; stipe curved, tapering upward, hollow, cartilaginous, paler than the pileus, with whitish tomentum, especially near the base, 2-3 cm. long, about 3 mm. thick; veil slight, arachnoid, disappearing at a very early stage.

This species was collected on a fallen dead log in low woods near the New York Botanical Garden, September 13, 1910; and compared at Upsala with Michener's plants from Pennsylvania. It is small, but conspicuous, and seems rather widely distributed in the northern United States.

***Cyathia hirsuta* (Schaeff.) White**

Cyathus striatus Willd.

STRIATE CYATHIA

Plate 40. Figure 11. $\times 1$

Peridium, or cup, obconic, open wide at the top (8-10 mm.), narrow at the base (2-4 mm.), 10-15 mm. high; outer surface ferruginous to dark-brown, shaggy; inner surface glabrous, shining, lead-colored, smooth at the base, distinctly striate-sulcate above; mouth decorated with stiff bristles at the margin, closed by a thin white membrane in young stages; sporangioles, or "eggs,"

dark-colored, 2 mm. broad, shining, somewhat angular, situated at the bottom of the cup; spores somewhat crescent-shaped, thick-walled, hyaline, $12-18 \times 6-9 \mu$.

This tiny bird's nest fungus occurs singly or in clusters on sticks, chips, rich earth, etc., throughout the United States and south as far as Mexico, Porto Rico, and other parts of the tropics. The "eggs" fill only the lower part of the cup, or "nest," leaving the upper striated part, by which the species is readily known, exposed to view.

The family to which this species and the next belong was studied here some years ago by Miss V. S. White, who published an illustrated article on the subject in the *Bulletin of the Torrey Club* 29: 260, in which all the bird's nest fungi of North America were discussed.

Crucibulum crucibuliforme (Scop.) White

Crucibulum vulgare Tulasne

COMMON CRUCIBULUM

Plate 40. Figure 12. $\times 1$

Peridium tough, cylindric-campanulate, truncate and slightly contracted at the base, 5-10 mm. broad and high; outer surface smooth, isabelline to fulvous, minutely velvety, glabrous and fading with age; inner surface smooth, shining, whitish; mouth entire, at first covered with a thin yellowish membrane; sporangioles 1.5-2 mm. broad, numerous, pale-ochraceous to whitish; spores ellipsoid, smooth, hyaline, $8-10 \times 4-6 \mu$.

This species of the Nidulariaceae occurs commonly throughout temperate North America on decayed twigs, chips, trash, etc. It grows in shady places and is shaped like a cup or crucible, while the preceding species seems to prefer the open and is vase-shaped or obconic in form. Both species are tough and inedible, but not poisonous, although much too small to be considered for economic purposes.

Campanularius semiglobatus sp. nov.

HEMISPHERIC CAMPANULARIUS

PLATE 40. FIGURE 13. $\times 1$

Pileus subhemispheric, with broad, compressed umbo, gregarious or subcespitose, 2.5-4 cm. broad; surface glabrous, smooth

or somewhat cracked, avellaneous-isabelline; lamellae adnate, broad, crowded, soon blackening; spores ovoid, very regular, smooth, black, opaque, $11-13 \times 8-9 \mu$; stipe equal, hollow, glabrous or pruinose, concolorous above, pale-lateritious below, 5-9 cm. long, 3-5 mm. thick; veil not apparent.

Type specimens were collected on manure in flower beds, in Bronxwood Park, June 20, 1910, by W. A. Murrill.

***Inocybe abundans* sp. nov.**

ABUNDANT INOCYBE

PLATE 40. FIGURE 14. $\times 1$

Pileus convex, rarely umbonate, gregarious, 2-4 cm. broad; surface dry, rimose-striate, silky-fibrillose, isabelline, with ferruginous hues at the center and light-brown fibrous lines radiating from it; context mild, with a rather strong fungous odor; lamellae free or adnexed, pallid to ferruginous; spores ovoid to ellipsoid in outline, irregular, roughly papillate, very pale ferruginous, $7 \times 4 \mu$; cystidia hyaline, flask-shaped with short necks, $25 \times 15 \mu$, stalks slender, about 20μ long; stipe equal, pallid above, subconcolorous below, 5 cm. long, 3 mm. thick; veil white, slight, evanescent.

Exceedingly abundant in damp places in woods about New York City in late summer. A brown species not easily distinguished from *I. infelix* Peck, which latter plant has recently been discovered to be poisonous.

***Inocybe Astoriana* sp. nov.**

ASTOR INOCYBE

PLATE 40. FIGURE 15. $\times 1$

Pileus convex, umbonate, gregarious, 2-3 cm. broad; surface dry, rimose-striate, silky-fibrillose, avellaneous-isabelline, fuliginous on the umbo; context sweet and nutty, with the odor of musty meal; lamellae adnate, pallid to fulvous; spores irregular, roughly papillate, fulvous, ellipsoid in outline, $8-10 \times 5 \mu$; cystidia flask-shaped with very short necks, hyaline, $35 \times 18 \mu$; stipe subequal, pallid above, concolorous below, 3 cm. long, 3 mm. thick; veil white, fragile, evanescent.

The type specimens here figured were collected by W. A. Murrill and E. C. Volkert, September 13, 1910, growing on the ground

in damp places in woods on the Astor estate in the suburbs of New York City. They resemble *I. infida* rather closely, but differ in several important characters.

***Panus stypticus* (Bull.) Fries**

ASTRINGENT PANUS

Plate 40. Figure 16. $\times 1$

Pileus tough, conchate, spatulate to reniform, about 1–3 cm. broad; surface isabelline to subfulvous, nearly even, zoned at times, the cuticle breaking into granules or small scales, margin entire or lobed, incurved when young; context thin, firm, rather tough, watery-white, taste not always evident at once, but becoming strongly acrid and astringent; lamellae narrow, thin, crowded, interveined, isabelline, determinate; spores globose, smooth, hyaline, $2-4 \times 1-3 \mu$; stipe lateral, short, swollen above, solid, compressed, pruinose, pale-isabelline or dull-white above, darker below.

This small, inconspicuous species is common throughout temperate regions during autumn and winter on stumps of deciduous trees in woods. It is phosphorescent, and also poisonous, possessing a strongly acrid and astringent taste, but it would hardly be collected for food even if well-flavored because of its small size and apparent toughness.